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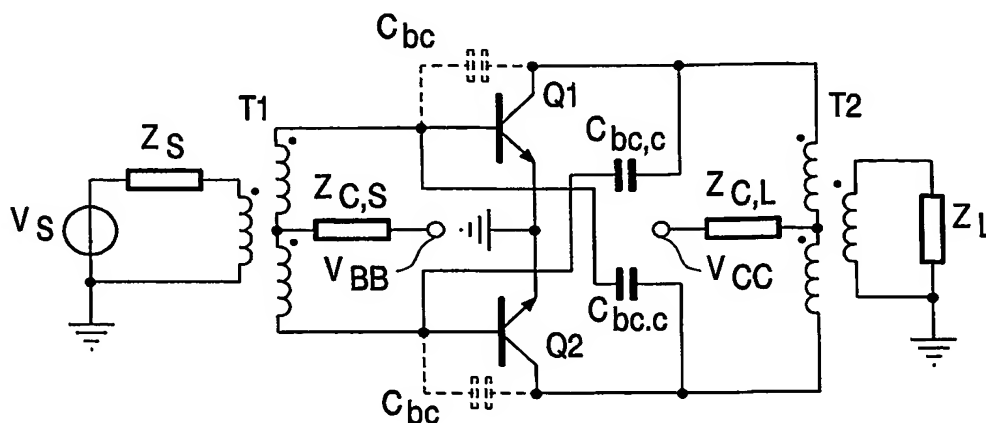
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(54) Title: NEUTRALIZATION OF FEEDBACK CAPACITANCE IN AMPLIFIERS



(57) Abstract: A transistor amplifier circuit has a current to current feedback transformer for neutralization of feedback capacitance and setting the input impedance of the amplifier. IM3 cancellation is implemented by out-of-band terminations at the input, which does not depend on the loading of the output of the amplifier. The IM3 cancellation contributes better linearity, while the capacitance neutralization contributes high and stable gain. These features are more orthogonal than other prior art techniques in terms of gain and linearity over a wide dynamic range. Hence there is less of a trade-off between the desirable properties of high gain and good linearity. Notably they can be implemented to have good efficiency and high levels of integration, which are important for many applications such as wireless transceivers for portable devices or consumer equipment. The amplifier can be a single ended or a differential common emitter amplifier. It can use GaAs HBTs for RF applications or other bipolar technologies (SiGe HBT, GaAs HBT, Si BJT).



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